



SOLID CARBIDE TOOLS

Milling / Drilling / Reaming



CERATIZIT GROUP

www.cobra-india.com

Introduction



Cobra Carbide, a part of Ceratizit group, offers complete range of Solid Carbide Round Tools catering to various industry segments like Automotive, Aerospace, Defence, Die & Mould, Energy, General Engineering and many more.

Our products are designed to suit specific requirements of machining different types of work material like variety of Steels including hardened Steel, Cast Iron, Aluminium and Exotic materials like Titanium, Inconel etc...



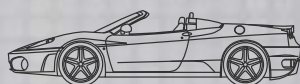
We also provide custom solution for any type of solid carbide round tools, specially designed for specific component and application. These include variety of form tools, profile cutters, taper end mills, dovetail cutters, T-slot cutters, spherical cutters, combination drills, drills for front chamfer and back chamfer etc..



This compact user-friendly catalogue provides you details of our regular standard offering with the list price. For more details, we are available on
Phone: +91-8110-4150 (03-06)
Email: cobra@cobracarbide.com



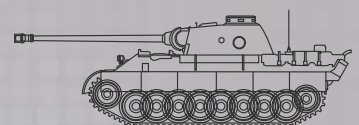
Aerospace



Automotive



General Engineering



Defense

PRODUCT INDEX

	01		02		03
TAIPAN - High Feed Variable Helix End Mills - 4 Flute - 32° to 38° Helix		ADDER - Ultra Performance Universal End Mills - 4 Flute - 40° Helix		Aluma End Mills - 2 and 3 Flute - 45° Helix	
	04-06		07-08		09-10
Die & Mould End Mills - 4 Flute (Square, Bull Nose & Ball Nose) - 30° Helix - 2 Flute (Ball Nose) - 30° Helix		Square and Ball Nose End Mills - 2 & 4 Flute - All Lengths - 30° Helix		4 Flute Roughers - Coarse Pitch - 30° Helix - Fine Pitch - 20° Helix	
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BLACKMAMBA - Coolant Fed Drills - 3XD, 5XD & 8XD - 30° Helix - 140° Point Angle		Non-Coolant Drills - 3XD & 5XD - 30° Helix - 140° Point Angle		30° Helix 142° Point Angle - 3XD & 5XD - 30° Helix - 142° Point Angle	
	18		19		20
Stub Length - DIN 6539 - 30° Helix - 118° Point Angle		Jobber Drills - DIN 338 - 30° Helix - 118° Point Angle		Chucking Reamers	
21-23					
Technical Data					

SYMBOL EXPLANATION

UN	Material group, e.g. UN = universal	HP	Material group, high performance	DM	Material group, die & mould
	Length, e.g. stub, regular...	R	Radius corner bull nose		With through coolant
	Number of teeth	$\lambda_s = \frac{44.5^\circ}{46.5^\circ}$	Helix angle	$\gamma_s = 20^\circ$	Rake angle
F 45°	Cutting edge with chamfer F = chamfer width [mm]	R	Fully radiused end ball nose R = radius [mm]		Possible machining directions
	Machining example	S	Sharp cutting edge	$d_1 = e8$ $d_A = h5$	Tolerance cutting edge diameter Tolerance shank diameter

WARRANTY & NOTES

Warranty

Cobra Carbide products shall not be subject to any claims what so ever arising out of breach of contracts or warranties. Replacement or credit will not be issued if there is a reason to believe the products has been misused, operated improperly or run outside of the normal tool specifications. Cobra Carbide assumes no responsibility or any liability for their products. Our liability is limited to replacement of the tools sold by us.

Notes

- Prices shown are in INR
- Prices are effective from 1st July 2017 and are subject to change
- GST as applicable will be charged extra
- Minimum Order Quantity:
 - Sizes less than 6mm - 20 Nos of each size
 - Sizes from 6mm to 12mm - 10 Nos of each size
 - Sizes more than 12mm - 5 Nos of each size
- For prices of sizes not appearing in this booklet please send us your enquiries to helpdesk@cobracarbide.com or call us at: +91-8110-415003

TAIPAN - High Feed Variable Helix End Mills

- Flute geometry allows better chip flow
- Center cutting for plunging and ramping
- Eccentric relief ground for higher feed rate and better edge stability
- Unequal flute face geometry for roughing and finishing operations
- Manufactured from premium submicron grain carbide

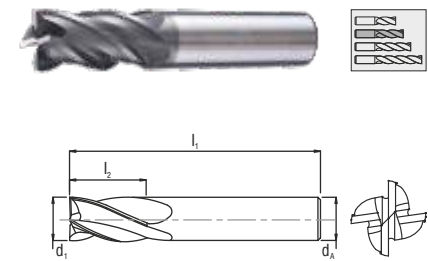
UN

HP

$\lambda_s = 32^\circ / 38^\circ$

<40 HRc

$d_1 = h10$
 $d_A = h6$



Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●			●	●	●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
4	4	51	14	4
6	6	63	20	4
8	8	63	20	4
10	10	75	25	4
12	12	75	25	4
16	16	89	32	4
20	20	100	38	4

- Utilise optimal helix angle, flute geometry, and core thickness
- Tool rigidity to increase the stability during cutting action
- Unequal flutes helps to reducing the chatter and vibration
- CG coating for improved tool life
- Manufactured from premium submicron grain carbide

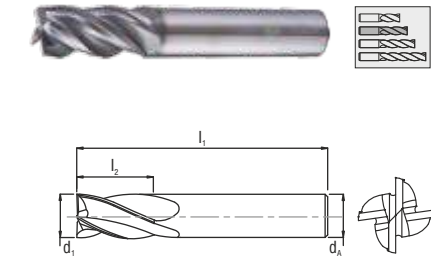
UN

HP

$\lambda_s = 40^\circ$

<40
HRC

$d_1 = h10$
 $d_A = h6$



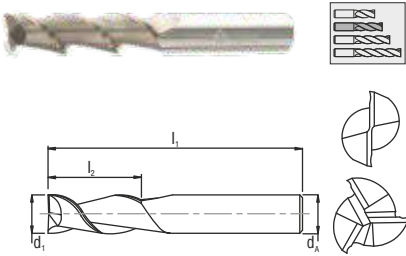
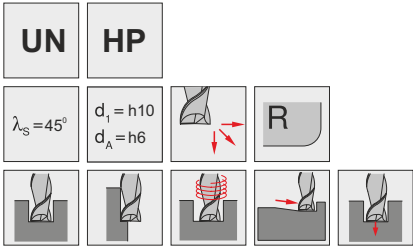
Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
		●		●	●	●	●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
4	4	51	14	4
6	6	63	19	4
8	8	63	20	4
10	10	75	22	4
12	12	75	25	4
16	16	89	32	4
20	20	100	38	4

High Performance End Mills

Solid carbide tools for milling

- Maximum metal removal and better chip evacuation
- Excellent for slotting and profiling at high speeds
- 3 Flute are outstanding for finishing and light roughing applications
- Special submicron grade for machining aluminum



Work Material							
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium
●							

d ₁ [mm]	d _A [mm]	l ₁ [mm]	l ₂ [mm]	R [mm]	Flute
4	4	50	14	SQ	2
4	4	50	14	0.50	2
4	4	50	14	SQ	3
4	4	50	14	0.50	3
6	6	63	20	SQ	2
6	6	63	20	0.50	2
6	6	63	20	SQ	3
6	6	63	20	0.50	3
8	8	63	20	SQ	2
8	8	63	20	0.50	2
8	8	63	20	SQ	3
8	8	63	20	0.50	3
8	8	63	20	1.00	3
10	10	75	22	SQ	2
10	10	75	22	0.50	2
10	10	75	22	SQ	3
10	10	75	22	0.50	3
10	10	75	22	1.00	3
12	12	75	25	SQ	2
12	12	75	25	0.50	2
12	12	75	25	SQ	3
12	12	75	25	0.50	3
12	12	75	25	1.00	3
16	16	89	32	SQ	2
16	16	89	32	1.00	2
16	16	89	32	SQ	3
16	16	89	32	1.00	3
16	16	89	32	1.50	3
16	16	89	32	2.00	3
20	20	100	38	SQ	2
20	20	100	38	1.00	2
20	20	100	38	SQ	3
20	20	100	38	1.00	3
20	20	100	38	1.50	3
20	20	100	38	2.00	3

High Performance End Mills

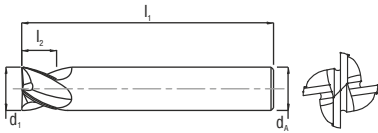
Solid carbide tools for milling

DIE & MOULD - 4 Flute Square
End Mills

Die & Mould End Mills

Solid carbide tools for milling

- Center cutting geometry
- Small chamfer for edge strength
- Manufactured from premium ultra fine carbide grade



DM

HP

$\lambda_{\text{cs}} = 30^\circ$

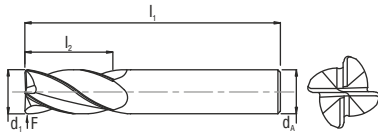
45-65
HRc

$d_1 = \text{h8}$
 $d_A = \text{h6}$

Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●	●	●	●		●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
3	6	50	5	4
4	6	50	6	4
6	6	50	9	4
8	8	63	12	4
10	10	75	14	4
12	12	75	15	4
16	16	89	20	4

- Center cutting geometry
- Corner radius gives more strength, designed for profiling and slotting
- Manufactured from premium ultra fine carbide grade



DM

HP

$\lambda_s = 30^\circ$

45-65
HRc

$d_1 = h8$
 $d_A = h6$

Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●	●	●	●		●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	R [mm]	Flute
3	4	50	12	0.50	4
4	4	50	15	0.50	4
6	6	60	20	0.50	4
6	6	60	20	1.00	4
8	8	70	25	0.50	4
8	8	70	25	1.00	4
10	10	90	30	0.50	4
10	10	90	30	1.00	4
12	12	90	30	0.50	4
12	12	90	30	1.00	4
16	16	105	50	0.50	4
16	16	105	50	1.00	4
16	16	105	50	2.00	4

DIE & MOULD - 2 & 4 Flute Ball Nose
End Mills

Die & Mould End Mills

Solid carbide tools for milling

- Center cutting geometry
- Manufactured from premium ultra fine carbide grade
- For better accuracy tolerance of ±20 microns on ball radius

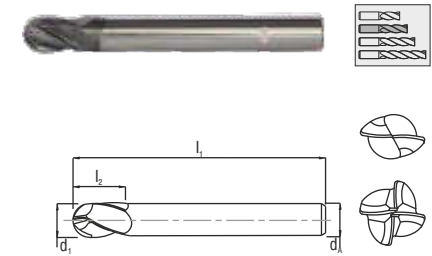
DM

HP

$\lambda_{cs}=30^\circ$

45-65
HRc

$d_1 = h8$
 $d_A = h6$



Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●	●	●	●		●		

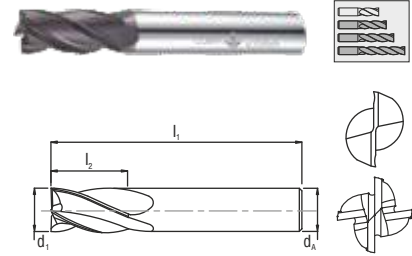
d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
3	6	50	5	2
3	6	50	5	4
4	6	50	6	2
4	6	50	6	4
4	6	75	6	2
4	6	75	6	4
6	6	50	9	2
6	6	50	9	4
6	6	100	12	2
6	6	100	12	4
8	8	75	12	2
8	8	75	12	4
8	8	100	14	2
8	8	100	14	4
10	10	75	14	2
10	10	75	14	4
10	10	100	15	2
10	10	100	15	4
12	12	75	15	2
12	12	75	15	4
12	12	100	18	2
12	12	100	18	4

SQUARE - 2 & 4 Flute Regular, Long & X Long

End Mills

07

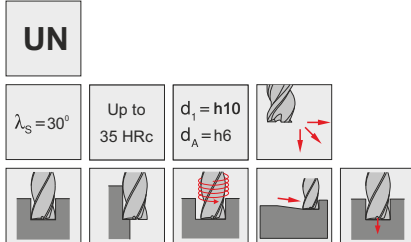
- Center cutting geometry
- Design for increased chip removal rate
- Capable to do slotting, profiling and plunging operations
- 2 Flute used for semi-finishing operation
- 4 Flute used for finishing operation
- Manufactured from premium submicron grain carbide



Work Material

● Excellent ● Good

Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium
●	●	●	●		●	●	



d ₁ [mm]	d _A [mm]	l ₁ [mm]	l ₂ [mm]
1	3	38	4
2	3	38	6.3
2.5	3	38	9.5
3	3	38	12
3	3	75	25
3	6	100	25
3.5	4	50	12
4	4	50	14
4	4	75	25
4	6	100	25
4.5	6	50	16
5	6	50	16
6	6	50	19
6	6	75	25
6	6	100	30
6	6	150	38
8	8	63	20
8	8	75	25
8	8	100	40
8	8	150	40
10	10	75	22
10	10	100	40
10	10	150	75
12	12	75	25
12	12	100	50
12	12	150	75
16	16	89	32
16	16	125	50
16	16	150	75
20	20	100	38
20	20	125	50
20	20	150	75

General Purpose End Mills

Solid carbide tools for milling

BALL NOSE - 2 & 4 Flute Regular, Long & X Long
End Mills

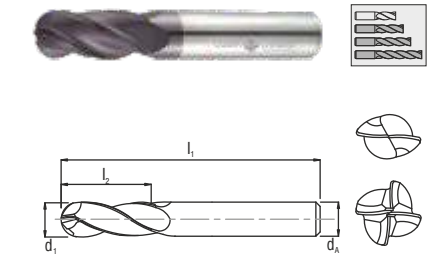
- Center cutting geometry
- Design for increased chip removal rate
- Capable to do slotting, profiling and plunging operations
- 2 Flute used for semi-finishing operation
- 4 Flute used for finishing operation
- Manufactured from premium submicron grain carbide

UN

$\lambda_{cs}=30^{\circ}$

Up to
35 HRC

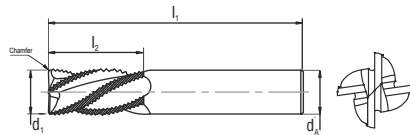
$d_1 = h10$
 $d_A = h6$



Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●	●	●	●		●	●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]
1	3	38	4
2	3	38	6.3
2.5	3	38	9.5
3	3	38	12
3	3	75	25
3	6	100	25
3.5	4	50	12
4	4	50	14
4	4	75	25
4	6	100	25
4.5	6	50	16
5	6	50	16
6	6	50	19
6	6	75	25
6	6	100	30
6	6	150	38
8	8	63	20
8	8	75	25
8	8	100	40
8	8	150	40
10	10	75	22
10	10	100	40
10	10	150	75
12	12	75	25
12	12	100	50
12	12	150	75
16	16	89	32
16	16	125	50
16	16	150	75
20	20	100	38
20	20	125	50
20	20	150	75

- Excellent roughing with reduced heat in the cut for hard material
- 4 Flute right hand helix
- Small corner radius/chamfer for strength
- For profiling, plunging, and ramping roughing operations in all types of material



UN

HPC

$\lambda_s = 30^\circ$

30-40
HRc

$d_1 = h10$
 $d_A = h6$

Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●	●	●		●		●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
6	6	63	20	4
8	8	63	20	4
10	10	70	25	4
12	12	76	25	4
14	14	89	32	4
16	16	89	32	4
18	18	100	38	4
20	20	100	38	4
25	25	100	38	4

ROUGHERS - 4 Flute Fine Pitch
End Mills

Roughers

Solid carbide tools for milling

- Excellent roughing with reduced heat in the cut for hard material
- 4 Flute right hand helix
- Small corner radius/chamfer for strength
- For profiling, plunging, and ramping roughing operations in all types of material

UN

HPC

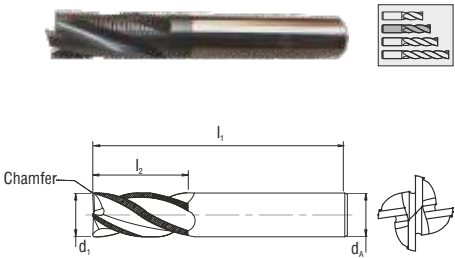
$\lambda_{\text{cs}} = 20^\circ$

30-40
HRc

$d_1 = h10$
 $d_A = h6$







Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●		●		●	●	●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
6	6	63	20	4
8	8	63	20	4
10	10	70	25	4
12	12	76	25	4
14	14	89	32	4
16	16	89	32	4
18	18	100	38	4
20	20	100	38	4
25	25	100	38	4

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide

UN

HP

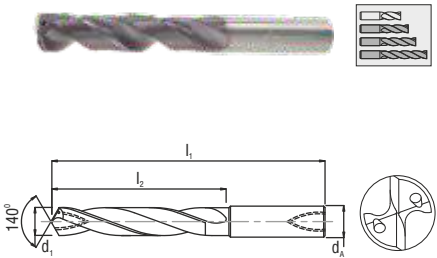
$\lambda_s = 30^\circ$

Up to 40 HRc

$d_1 = h7$
 $d_A = h6$







Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●	●	●			●	●	●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
3	6	62	20	2
3.3	6	62	20	2
3.5	6	62	20	2
4	6	66	24	2
4.2	6	66	24	2
4.5	6	66	24	2
5	6	66	24	2
5.5	6	66	24	2
6	6	66	24	2
6.5	8	79	34	2
6.8	8	79	34	2
7	8	79	34	2
7.5	8	79	41	2
8	8	79	41	2
8.5	10	89	47	2
8.8	10	89	47	2
9	10	89	47	2
9.5	10	89	47	2
10	10	89	47	2
10.3	12	102	55	2
10.5	12	102	55	2
10.8	12	102	55	2
11	12	102	55	2
11.5	12	102	55	2
12	12	102	55	2
12.5	14	107	60	2
13	14	107	60	2
13.5	14	107	60	2
14	14	107	60	2
14.5	16	115	65	2
15	16	115	65	2
15.5	16	115	65	2
16	16	115	65	2

High Performance Drills

Solid carbide tools for drilling

BLACKMAMBA - 5XD The Coolant Fed
Drills

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide

UN

HP

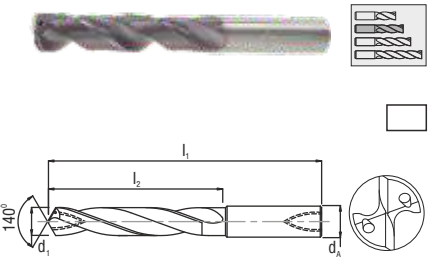
$\lambda_s = 30^\circ$

Up to 40 HRc

$d_1 = h7$
 $d_A = h6$







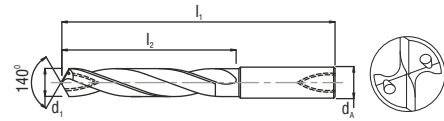
Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●	●	●			●	●	●		

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
3	6	66	28	2
3.3	6	66	28	2
3.5	6	66	28	2
4	6	74	36	2
4.2	6	74	36	2
4.5	6	74	36	2
5	6	82	44	2
5.5	6	82	44	2
6	6	82	44	2
6.5	8	91	53	2
6.8	8	91	53	2
7	8	91	53	2
7.5	8	91	53	2
8	8	91	53	2
8.5	10	103	61	2
8.8	10	103	61	2
9	10	103	61	2
9.5	10	103	61	2
10	10	103	61	2
10.3	12	118	71	2
10.5	12	118	71	2
10.8	12	118	71	2
11	12	118	71	2
11.5	12	118	71	2
12	12	118	71	2
12.5	14	124	77	2
13	14	124	77	2
13.5	14	124	77	2
14	14	124	77	2
14.5	16	133	83	2
15	16	133	83	2
15.5	16	133	83	2
16	16	133	83	2

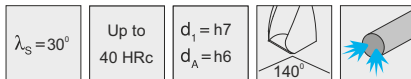
High Performance Drills

Solid carbide tools for drilling

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide



UN **HP**

**Work Material**

● Excellent ● Good

Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium
●	●	●			●	●	●

d ₁ [mm]	d _A [mm]	l ₁ [mm]	l ₂ [mm]	Flute
3	6	72	34	2
3.3	6	72	34	2
3.5	6	72	34	2
4	6	81	43	2
4.2	6	81	43	2
4.5	6	81	43	2
5	6	95	57	2
5.5	6	95	57	2
6	6	95	57	2
6.5	8	114	76	2
6.8	8	114	76	2
7	8	114	76	2
7.5	8	114	76	2
8	8	114	76	2
8.5	10	142	95	2
8.8	10	142	95	2
9	10	142	95	2
9.5	10	142	95	2
10	10	142	95	2
10.3	12	162	114	2
10.5	12	162	114	2
10.8	12	162	114	2
11	12	162	114	2
11.5	12	162	114	2
12	12	162	114	2
12.5	14	178	133	2
13	14	178	133	2
13.5	14	178	133	2
14	14	178	133	2
14.5	16	203	152	2
15	16	203	152	2
15.5	16	203	152	2
16	16	203	152	2

High Performance Drills

Solid carbide tools for drilling

NON-COOLANT - 3XD
Drills

- 140° point angle and high performance geometry allows for high penetration rates
- Provides accurate hole sizing as well as near burnished holes
- The Cobra drill comes standard with TiAlN coating that provides unparalleled performance in difficult to machine applications
- Manufactured from premium submicron grain carbide

UN

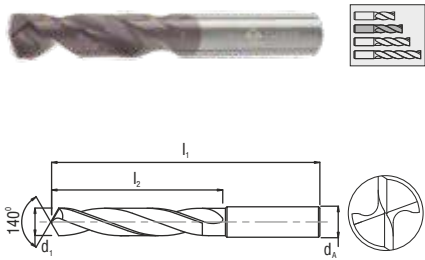
HP

$\lambda_{\text{cs}}=30^\circ$

Up to 40 HRc

$d_1 = h7$
 $d_A = h6$





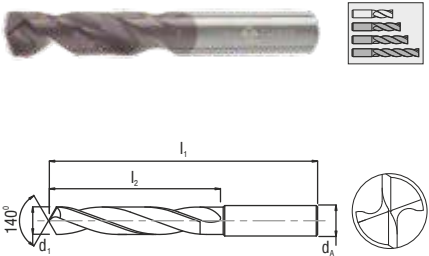
Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●			●	●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
3	6	62	20	2
3.3	6	62	20	2
3.5	6	62	20	2
4	6	66	24	2
4.2	6	66	24	2
4.5	6	66	24	2
5	6	66	24	2
5.5	6	66	24	2
6	6	66	24	2
6.5	8	79	34	2
6.8	8	79	34	2
7	8	79	34	2
7.5	8	79	41	2
8	8	79	41	2
8.5	10	89	47	2
8.8	10	89	47	2
9	10	89	47	2
9.5	10	89	47	2
10	10	89	47	2
10.3	12	102	55	2
10.5	12	102	55	2
10.8	12	102	55	2
11	12	102	55	2
11.5	12	102	55	2
12	12	102	55	2
12.5	14	107	60	2
13	14	107	60	2
13.5	14	107	60	2
14	14	107	60	2
14.5	16	115	65	2
15	16	115	65	2
15.5	16	115	65	2
16	16	115	65	2
16.5	18	123	73	2
17	18	123	73	2
17.5	18	123	73	2
18	18	123	73	2
18.5	20	131	79	2
19	20	131	79	2
19.5	20	131	79	2
20	20	131	79	2

High Performance Drills

Solid carbide tools for drilling

- 140° point angle and high performance geometry allows for high penetration rates
- Provides accurate hole sizing as well as near burnished holes
- The Cobra drill comes standard with TiAlN coating that provides unparalleled performance in difficult to machine applications
- Manufactured from premium submicron grain carbide



UN

HP

$\lambda_s = 30^\circ$

Up to 40 HRc

$d_1 = h7$
 $d_A = h6$

Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●			●	●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	Flute
3	6	66	28	2
3.3	6	66	28	2
3.5	6	66	28	2
4	6	74	36	2
4.2	6	74	36	2
4.5	6	74	36	2
5	6	82	44	2
5.5	6	82	44	2
6	6	82	44	2
6.5	8	91	53	2
6.8	8	91	53	2
7	8	91	53	2
7.5	8	91	53	2
8	8	91	53	2
8.5	10	103	61	2
8.8	10	103	61	2
9	10	103	61	2
9.5	10	103	61	2
10	10	103	61	2
10.3	12	118	71	2
10.5	12	118	71	2
10.8	12	118	71	2
11	12	118	71	2
11.5	12	118	71	2
12	12	118	71	2
12.5	14	124	77	2
13	14	124	77	2
13.5	14	124	77	2
14	14	124	77	2
14.5	16	133	83	2
15	16	133	83	2
15.5	16	133	83	2
16	16	133	83	2
16.5	18	143	92	2
17	18	143	92	2
17.5	18	143	92	2
18	18	143	92	2
18.5	20	153	101	2
19	20	153	101	2
19.5	20	153	101	2
20	20	153	101	2

High Performance Drills

Solid carbide tools for drilling

30° HELIX 142° POINT ANGLE HP - 3XD
Drills

- Designed for broad range of materials
- High-efficiency flute Profile
- Maximum Metal Removal Rates (MRR)
- Lower cost per hole
- Stable, low-thrust point form

UN

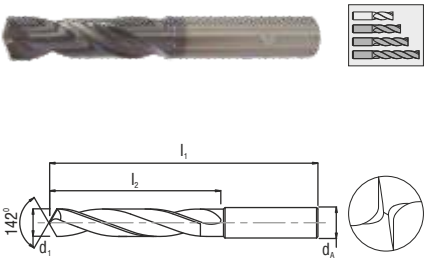
HP

$\lambda_{\text{ps}} = 30^\circ$

Up to
35 HRc

$d_1 = h7$
 $d_A = h6$





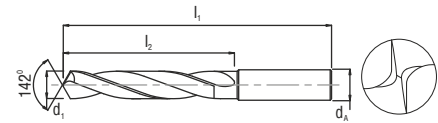
Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
	●	●			●	●			

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	 Flute
2.5	2.5	43	14	2
3	3	57	16	2
3.3	4	63	22	2
3.5	4	63	22	2
4	4	63	22	2
4.2	5	63	26	2
4.5	5	63	26	2
5	5	63	26	2
5.5	6	76	30	2
6	6	76	30	2
6.5	8	82	35	2
6.8	8	82	35	2
7	8	82	35	2
7.5	8	82	38	2
8	8	82	38	2
8.5	10	89	43	2
8.8	10	89	43	2
9	10	89	43	2
9.5	10	89	43	2
10	10	89	43	2
10.3	12	101	51	2
10.5	12	101	51	2
10.8	12	101	51	2
11	12	101	51	2
11.5	12	101	51	2
12	12	101	51	2
12.5	14	107	54	2
13	14	107	54	2
13.5	14	107	54	2
14	14	107	54	2
14.5	16	117	60	2
15	16	117	60	2
15.5	16	117	60	2
16	16	117	60	2

High Performance Drills

Solid carbide tools for drilling

- Designed for broad range of materials
- High-efficiency flute Profile
- Maximum Metal Removal Rates (MRR)
- Lower cost per hole
- Stable, low-thrust point form



UN	HP
$\lambda_s = 30^\circ$	Up to 35 HRc
$d_1 = h7$ $d_A = h6$	

Work Material

● Excellent ● Good

Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium
	●	●			●	●	

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	Flute
2.5	2.5	57	30	2
3	3	63	24	2
3.3	4	69	32	2
3.5	4	69	32	2
4	4	69	32	2
4.2	5	80	38	2
4.5	5	80	38	2
5	5	80	38	2
5.5	6	82	40	2
6	6	82	40	2
6.5	8	91	48	2
6.8	8	91	48	2
7	8	91	48	2
7.5	8	91	48	2
8	8	91	48	2
8.5	10	103	55	2
8.8	10	103	55	2
9	10	103	55	2
9.5	10	103	55	2
10	10	103	55	2
10.3	12	120	60	2
10.5	12	120	60	2
10.8	12	120	60	2
11	12	120	60	2
11.5	12	120	66	2
12	12	120	66	2
12.5	14	126	72	2
13	14	126	72	2
13.5	14	134	77	2
14	14	134	77	2
14.5	16	140	80	2
15	16	140	80	2
15.5	16	146	82	2
16	16	146	82	2

STUB LENGTH - DIN 6539

Drills

- Manufactured from premium sub micron grain carbide
- Precision ground carbide drills are designed for high feed rate and good chip evacuation
- 118° four facet point angle, right hand cut-right hand spiral

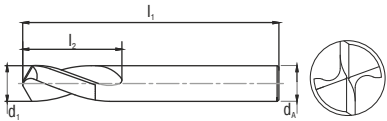
UN

$\lambda_{\text{cs}}=30^{\circ}$

Up to
28 HRc

$d_1 = h7$
 $d_A = h6$


118°



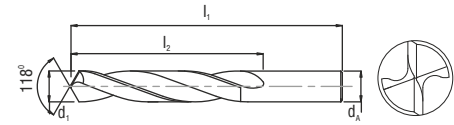
Work Material									● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium			
●	●	●			●	●				

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]
1	1	26	6
1.5	1.5	32	9
1.6	1.6	34	10
2	2	38	12
2.5	2.5	43	14
3	3	46	16
3.3	3.3	49	18
3.5	3.5	52	20
4	4	55	22
4.2	4.2	55	22
4.5	4.5	58	24
5	5	62	26
5.5	5.5	66	28
6	6	66	28
6.5	6.5	70	31
6.8	6.8	74	34
7	7	74	34
7.5	7.5	74	34
8	8	79	37
8.5	8.5	79	37
8.8	8.8	84	40
9	9	84	40
9.5	9.5	84	40
10	10	89	43
10.2	10.2	89	43
10.5	10.5	89	43
10.8	10.8	95	47
11	11	95	47
11.5	11.5	95	47
12	12	102	51
12.5	12.5	102	51
13	13	102	51
14	14	107	60

General Purpose Drills

Solid carbide tools for drilling

- Manufactured from premium submicron grain carbide
- Precision ground carbide drills are designed for high feed rate and good chip evacuation
- 118° four facet point angle, right hand cut-right hand spiral



UN

$\lambda_s = 30^\circ$

28
HRc

$d_1 = h7$
 $d_A = h6$



Work Material

● Excellent ● Good

Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium
●	●					●	

d_1 [mm]	d_A [mm]	l_1 [mm]	l_2 [mm]	Flute
1	1	34	12	2
1.5	1.5	40	18	2
1.6	1.6	43	20	2
2	2	49	24	2
2.5	2.5	57	30	2
3	3	61	33	2
3.3	3.3	65	36	2
3.5	3.5	70	39	2
4	4	75	43	2
4.2	4.2	75	43	2
4.5	4.5	80	47	2
5	5	86	52	2
5.5	5.5	93	57	2
6	6	93	57	2
6.5	6.5	101	63	2
6.8	6.8	109	69	2
7	7	109	69	2
7.5	7.5	109	69	2
8	8	117	75	2
8.5	8.5	117	75	2
8.8	8.8	125	81	2
9	9	125	81	2
9.5	9.5	125	81	2
10	10	133	87	2
10.3	10.3	133	87	2
10.5	10.5	133	87	2
11	11	142	94	2
11.5	11.5	142	94	2
12	12	151	101	2
12.5	12.5	151	101	2
13	13	151	101	2
13.5	13.5	160	108	2
14	14	160	108	2
14.5	14.5	169	114	2
15	15	169	114	2
15.5	15.5	178	120	2
16	16	178	120	2

General Purpose Drills

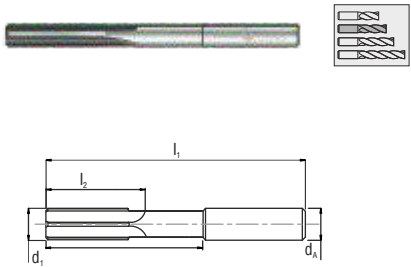
Solid carbide tools for drilling

CHUCKING REAMERS

- 4 Flutes in sizes below 6mm; 6 flutes in sizes 6mm and above.
- General purpose reaming in all materials including steel and alloys up to RC40, Stainless, Aluminum, Brass, Bronze, and Plastics

UN

d_i = H7
d_A = h6



Work Material								● Excellent	● Good
Aluminium Alloy	Carbon Steel	Alloy Steel	Hardened Steel	Nickel / Inconel Alloy	Stainless Steel	Cast Iron	Titanium		
●	●					●			

d _i [mm]	d _A [mm]	l ₁ [mm]	l ₂ [mm]	 Flute
3	3	57	16	4
4	4	64	19	4
5	5	76	25	4
6	6	76	25	4
7	7	83	29	6
8	8	83	29	6
9	9	89	32	6
10	10	102	38	6
11	11	102	38	6
12	12	102	38	6

Note: Also available in other sizes, as per your requirements.

Chucking Reamers

Solid carbide tools for reaming

General Purpose and High Performance Endmills

Material	Diameter Feed (mm/tooth)									
	2	3	5	6	8	10	12	16	20	25
Steel	0.014	0.017	0.025	0.03	0.045	0.055	0.07	0.08	0.09	0.13
High Tensile Steels	0.01	0.013	0.018	0.022	0.03	0.038	0.052	0.056	0.06	0.1
Acid Resistant	0.018	0.022	0.035	0.045	0.06	0.075	0.095	0.110	0.13	0.15
Cast Material	0.014	0.017	0.025	0.03	0.045	0.055	0.07	0.08	0.09	0.13
Aluminium Alloys	0.036	0.044	0.07	0.09	0.12	0.15	0.19	0.225	0.26	0.3
Titanium Alloys	0.018	0.022	0.035	0.045	0.06	0.075	0.095	0.110	0.13	0.15
Non Ferrous	0.036	0.044	0.07	0.09	0.12	0.15	0.19	0.225	0.26	0.3
Plastic	0.060	0.080	0.100	0.120	0.140	0.180	0.220	0.280	0.320	0.400
Mg Alloys	0.036	0.044	0.07	0.09	0.12	0.15	0.19	0.225	0.26	0.3

General Purpose and High Performance Drills

Material	Diameter Feed (mm/rev)									
	2.00	3.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00	25.00
Steel	0.05	0.08	0.10	0.13	0.16	0.20	0.22	0.25	0.28	0.30
High Tensile Steels / Acid Resistant	0.04	0.05	0.07	0.1	0.12	0.16	0.15	0.20	0.23	0.28
Cast Material	0.06	0.09	0.12	0.16	0.18	0.21	0.23	0.25	0.28	0.30
Aluminum Alloys	0.08	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
Titanium Alloys	0.02	0.03	0.05	0.06	0.08	0.10	0.11	0.14	0.18	0.20
Non Ferrous	0.06	0.07	0.10	0.12	0.16	0.18	0.20	0.23	0.26	0.30
Mg Alloys	0.07	0.09	0.12	0.16	0.20	0.23	0.25	0.28	0.30	0.32

Chucking Reamers

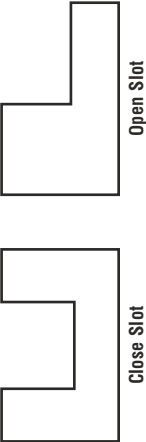
Material	Diameter Feed (mm/rev)						
	2.00	3.00	5.00	6.00	8.00	10.00	12.00
Steel	0.08	0.12	0.15	0.18	0.20	0.23	0.25
High Tensile Steels / Acid Resistant	0.06	0.10	0.12	0.14	0.16	0.18	0.20
Cast Material	0.07	0.11	0.14	0.16	0.19	0.22	0.25
Aluminum Alloys	0.10	0.15	0.20	0.22	0.24	0.26	0.30
Titanium Alloys	0.04	0.06	0.08	0.10	0.12	0.15	0.18
Non Ferrous	0.08	0.10	0.13	0.17	0.21	0.26	0.28
Mg Alloys	0.12	0.15	0.18	0.22	0.26	0.3	0.35

TECHNICAL DATA - End Mills

Cutting Speed (Vc = m/min)

Material Group	Material Type	Taipan	Adder	Aluma	Die & Mould			General Purpose		Roughers
					Square	Ball Nose	Bull Nose	Square	Ball Nose	
Steel	Structural Steel	105 - 130	120 - 150					70-100	60-80	90-120
	Free Cutting Steel	80 - 120	100 - 130					55-90	60-80	70-120
	Unalloyed Heat Treatable Steel	80 - 120	100 - 130					55-90	40-60	70-120
	Unalloyed Case Hard Steel	120 - 150	140 - 160					80-100	40-60	100-130
	Alloyed Case Hardened Steel	85 - 115	95 - 120					50-70	35-45	60-100
	Nitriding Steel	95 - 135	120 - 145					60-90	35-45	80-120
Acid Resistant / Stainless Steel	Stainless Steel, Sulphured Austenitic Steel, Martensitic	-	80 - 110					30-45	30-40	40-60
	Low Carbon Steel	100 - 120	110 - 130					50-60	55-70	90-110
	Medium Carbon Steel	100 - 110	70 - 90					40-50	40-60	80-100
	Alloyed Heat Treatable Steel	80 - 120	100 - 120					55-80	50-70	70-100
	Tool Steel	80 - 120	100 - 120					55-80	40-60	70-100
	High Speed Steel	-	-					35-45	40-60	-
Cast Materials	Spring Steel							35-45	50-70	-
	Cast Iron	130 - 170	150 - 180					80-110	60-75	100-150
	Spheroidal Graphite and Malleable Ci	80 - 130	120 - 170					70-90	50-60	90-120
	Chilled Ci							40-50	45-60	
Aluminium and Aluminium Alloys	Aluminium and Ti Alloys			300-350				230 - 280	140-160	
	Al Wrought Alloys			350-430				200-250	120-135	
	Al Cast Alloys < 10%si			100-175				150-220	75-90	
	Al Cast Alloys > 10%si			100-175				150-220	75-90	
Special Alloys	Special Alloys	60 - 80	80 - 100					20-35		30-40
	Ti and Ti Alloys	50 - 60	90 - 115					25-35		40-60
Non ferrous Metals	Copper Low Alloyed			80-100				90-120	75-90	
	Brass			65-85				70-90	50-60	
	Bronze			65-85				60-90	75-100	
Plastics	Duro Plastics			75-100				80-120		
	Thermoplastics			75-100				80-120		
Magnesium Alloys	Mg Alloys			175-200				200-250	70-100	
Hardened steel	<55HRC				45 - 50	90-100	75 - 80			
	55 - 60HRC				40 - 45	80-90	65 - 75			
	60-65HRC				30 - 35	70-80	60 - 65			

NOTE: All the parameters are taken for closed slot and for 1XD(depth).
For open slot increase speed by 10% and for depth more than 1XD decrease speed by 10%



Material Group	Material Type	Blackmamba				Die & Mould		30° HP	Jobber	Reamers
		3XD	5XD	8XD		3XD	5XD			
Steel	Structural Steel	80 - 100	60 - 80	55 - 70		60 - 80	50 - 70	75 - 95	60 - 70	50 - 65
	Free Cutting Steel	100 - 120	70 - 90	65 - 75		70 - 90	60 - 80	80 - 100	60 - 70	50 - 65
	Unalloyed Heat Treatable Steel	80 - 90	60 - 75	55 - 70		60 - 75	50 - 65	72 - 85	60 - 70	50 - 60
	Unalloyed Case Hard Steel	90 - 100	70 - 85	65 - 75		60 - 70	50 - 60	75 - 90	60 - 70	50 - 60
	Alloyed Case Hardened Steel	75 - 90	65 - 75	60 - 70		65 - 75	55 - 65	65 - 70	50 - 60	45 - 55
Acid Resistant / stainless Steel	Nitriding Steel	70 - 80	55-65	50 - 60		50 - 60	45 - 55		40 - 50	40 - 50
	Stainless Steel,	30 - 40	25 - 35	20 - 30		25 - 35	20 - 30	30 - 40	20 - 25	20 - 25
	Sulphured Austenitic Steel, Martensitic									
	Alloyed Heat Treatable Steel	60 - 80	55 - 65	45 - 55		50 - 60	45 - 55	50 - 65	40 - 50	35 - 45
	Tool Steel	40 - 50	35-45	30 - 40		30 - 40	25 - 35	35 - 45	40 - 50	20 - 30
High Tensile Steel	High Speed Steel	30 - 40	25-35	20 - 30		25 - 35	20 - 30	25 - 35		15 - 25
	Spring Steel	30 - 40	25-35	20 - 30		30 - 35	25 - 30	25 - 35	20 - 25	15 - 25
	Cast Iron	125 - 150	110 - 135	110 - 120		100 - 120	80 - 100	100 - 130	70 - 80	55 - 65
	Spheroidal Graphite & Malleable Ci	95 - 115	85 - 105	75 - 85		75 - 100	65 - 90	80 - 100	60 - 70	40 - 55
	Chilled Ci	30 - 40	25 - 35	20 - 25		20 - 25	18 - 23	25 - 35	10	20 - 30
Aluminum & Aluminum Alloys	Aluminum Alloys	175 - 200	160 - 180	135 - 150		150 - 180	130 - 160		150 - 180	140 - 160
	Al Wrought Alloys	175 - 200	160 - 180	135 - 150		150 - 180	130 - 160		150 - 180	120 - 135
	Al Cast Alloys < 10%si	160 - 180	140 - 160	120 - 140		100 - 130	80 - 110		100 - 130	110 - 125
	Al Cast Alloys > 10%si	160 - 180	140 - 160	120 - 140		100 - 130	80 - 110		100 - 130	75 - 85
	Special Alloys	25 - 30	20 - 25	15 - 20		15 - 20	12 - 17	18 - 23	15 - 18	15 - 25
Non Ferrous Metals	Ti & Ti Alloys	30 - 35	25 - 30	20 - 25		20 - 25	17 - 23	20 - 25	15 - 20	20 - 30
	Copper Low Alloyed	75 - 90	65 - 75	55 - 65		60 - 70	50 - 60		60 - 70	65 - 75
	Brass	160 - 180	140 - 155	125 - 145		130 - 150	110 - 130		130 - 150	60 - 70
	Bronze	75 - 90	65 - 75	55 - 65		60 - 75	50 - 65		100 - 110	55 - 65
	Mg Alloys	180 - 200	160 - 180	140 - 160		150 - 180	120 - 150		120 - 150	95 - 105

CUSTOMISED SOLUTIONS



- Profile cutter, Combination tools, T-Slot cutters, Drills with entry & back chamfer, T-slot cutters, Spherical Cutters & many more.
- Made to order suitable for specific components & applications
- Please call us for discussions / send your enquiry to helpdesk@cobracarbide.com



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Subject to technical changes and improvements in production.

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